Investigation Of Computer / Computer Technology Course Teaching Programs

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Abstract
The purpose of this study is to examine the conceptual framework of the changes in the curriculums of the Information Technologies course, which was started in 2006 and redeveloped in 2012 and 2018. These three curricula approved and implemented by the Board of Education within the Ministry of National Education in the survey will be examined by taking into account the aims, achievements, educational status and test cases. In the review, content analysis method will be used from qualitative research methods and the results are presented comparatively.

Introductıon
There are a number of skills for individuals must have in order to be able to keep up with the rate of increase of knowledge, to adapt to developing technology, to follow different ways of accessing information, and to provide indicators of being an "information society".

Adams (2007) has addressed these skills in seven key areas and emphasized technology literacy. Also Demirel (2009) states that successful individuals of the future are individuals who can effectively use technology in information retrieval and that every student / individual who grows up in the information age must have the ability to effectively access and evaluate this knowledge from various sources by using rapidly changing information technology.

According to this, it is clear that one of the basic ways of accessing information by using different resources of individuals who should have 21st century skills is to use the computers of today's technology correctly. In order to ensure that computers are used to access information, assimilate knowledge, and produce new information, it is essential that the courses of Information Technologies be carried out in schools and that technological skills are acquired from the right source, not just individual development but also social development; It is important to be able to catch up with the world standards and the technology age and be a productive society.

For this reason, considering that computer lectures are important in our country, it was decided by the Board of Education to take computer courses as elective courses in primary schools in 1998 (MEB, 1998). In 2006, "Elementary Computer Course (1-8th Grades) Curriculum" was prepared. This program was reorganized in 2012 after six years, and it was named "Information Technologies and Software Course Teaching Program". This program was restructured in 2018 with the same name under the scope of updating and development of all programs. In summary, although the name and content of the course between 1998 and 2013 have been changed, the course has been continued electively. After 2013, it was decided by the Ministry of National Education that the course should be held as compulsory for the 5th and 6th grades of secondary school and as elective course for the 7th and 8th grades.

In our country, the informatics technologies and the software courses are organized by the Ministry of National Education in accordance with the Standard Based Program. In order to be able to raise the 21st century needs of the appropriate individual, the education authorities of the other countries in the world are establishing this standardized framework program by determining the education standards at the national level (MEB, 2012). For this reason, programs used in Technology education in many countries are also standards-based teaching programs (Uzgur&Aykaç, 2016).

According to the taxonomy established by Tomei in accordance with the classification made as the sufficiency levels established by Schulz, Fraillon and Ainley (2011), the achievements of Information Technologies and software lessons were established in our country (MEB, 2012).

Teacher views were obtained for the formation of other program items with the achievements determined according to the levels. After this phase, the reorganized instructional technology curriculum includes important themes such as; ethical values in technology use and production, personal and socially information literacy, aesthetics, information security and cybercrime (MEB, 2012).

As you its seen, the need to update the programs in order to catch up with the social changes has been realized. The evaluation of developed programs is also important to determine how effective the program is and can be performed by many methods.

Although there are studies in our country that examined the change of the computer course teaching programs in different methods (Bayrak and Erden, 2007; Yilmaz Tanatas, 2010, Firat, Durdukoca and Arıbaş, 2011), it is seen that researches which examines all programs comparatively are needed. It is thought that determining how the curricula have changed in terms of purpose, achievement, educational status and test situation will be important to determine the way in which social needs have changed over the past 20 years.

Method
Research Method
In the research, document analysis method was used as one of the qualitative research methods. The analysis of the document includes analysis of the materials about the facts or planned phenomena (Yıldırım and Şimşek, 2011). Accordingly, in this research, educational programs related to computer which developed from elementary to secondary schools since 2006.

Data Collection
Teaching programs developed for primary and secondary school computer lessons were examined in the research. These curriculums were "Elementary Computer Teaching (1-8th Grades) Teaching Program" implemented in 2006,; "Information Technologies and Software Course Teaching Program (5th and 8th Grades)" which was put into practice in 2012 and "Information Technologies and Software Course Teaching Program (5th and 6th Grades)" which started to be implemented since 2018. By accessing the mentioned curricula, these programs have been evaluated comparatively for the aims, achievements, educational conditions and test cases.

Data Analysis
The instructional programs developed for the computer course were analyzed in terms of naming, class levels, goals, achievements, unit / learning areas, topics and measurement-evaluation topics. Descriptive statistics are used in the analysis of the data. Findings are also supported by expressions located in the curricula.

Fındıngs
Naming of Teaching Programs
When the curriculums were examined in terms of nomenclature, it was found that the curriculum that was put into practice in 2006 was named as "Primary Computer Teaching Curriculum" and it was found that it was named "Teaching Technologies and Software Course Teaching Program" in 2012. In 2018, the name of the program has not changed. In addition, this course has become a compulsory course since 2018, while it has been elective course in 2006 and 2012.

Levels of Teaching Practices
It has been demonstrated that computer course teaching programs applied in primary and secondary schools are applied at different grade levels in different years. Findings related to this are given in Table 1.

Table 1. Distribution of Teaching Programs in Terms of Grade Levels Applied

Teaching Programs	1. Grade	2. Grade	3. Grade	4. Grade	5. Grade	6. Grade	7. Grade	8. Grade
2006 (Elective)	+	+	+	+	+	+	+	+
2012 (Elective)	-	-	-	-	+	+	+	+
2018 (compulsory)	-	-	-	-	+	+	-	-

When Table 1 is examined, the "Primary Computer Teaching Curriculum", which was put into practice in 2006, has been developed to cover all primary education from first grade to eighth grade. The "Information Technologies and Software Course Teaching Program", which was started to be implemented in 2012, was prepared for secondary schools. It is seen that the education program implemented in 2018 is directed to the fifth and sixth classes.

Aims in Teaching Programs
While the aims of the program of the computer lesson curriculums applied in elementary and junior high schools are under the heading of vision in 2006; In 2012 the program was included in the title of objectives and competences. In 2018, it was mentioned as a special purpose of the program. The table for the purposes of the curricula is given below (Table 2).

Table 2. Aims of Teaching Programs

	2006	2012	2018
Aims	• Correct, effective and beautiful use of Turkish Language • Competencies of Information Technologies • Critical thinking • Decision making • Being a judge in case of unexpected situations • Work within the group • Having communication skills • Very versatile enough	• Informatics literacy • Communicating, information sharing and self-expression using information technologies • Researching, information structuring and working collaborative • Problem solving, programming and original product developing	• Understanding of technological concepts, systems and processes as being digital citizens and creating technical know-how • Searching information by technology and internet, learning opportunities that are effective and purposeful • Acquisitimg and developing the problem solving, reasoning and computational skills, • Acquiring cooperative working skills, benefit from the social environment and share what they learn as part of the learning process, • Developing an understanding of algorithm design to be able to express both verbally and visually. • Having accumulation of programming skills to use at least one of the programming languages. • Making execution on product design and management • Developing innovative and original projects to solve problems in daily life (problems faced by elderly and disabled people, etc.) • Gaining awareness about lifelong learning

When Table 2 is examined, it appears that the foremost aims are the use of information technologies, the ability to work collaboratively, and the development of problem-solving skills. 2012 and 2018 curricula are both have aimes about product development. In addition, it has been determined that the 2018 curriculum includes objectives for lifelong learning.

Achievements of Teaching Programs
Findings regarding the number of achievements of curricula are given in Table 3.

Table 3. Number of Achivements in Teaching Programs

	1. Grade	2. Grade	3.Grade	4. Grade	5. Grade	6.Grade	7. Grade	8. Grade	Total
2006	19	19	19	21	23	24	17	21	163
2012				Frame Program					183
2018	-	-	-	-	75	78	-	-	153

When Table 3 is examined, it is seen that 163 in the education program in 2006, 183 in 2012 and 153 in the education program in 2018. In the curricula of 2006 and 2018, achievements were identified separately by class levels. In the 2012 curriculum, it is expressed as a framework program and the achievements without class level are mentioned. It is stated that the curriculum developed in 2012 should determine the levels of the students for different proficiencies and leave the level or subjects to the teacher's preference. The reason for not distributing the gains according to the class levels is due to the structure of the program.

Learning Areas / Units in Teaching Programs
While the learning areas were included in 2006 and 2012 regarding the computer program teaching programs applied in elementary and junior high schools, "unit based approach" was taken as basis in 2018. The distribution of learning areas and units of the programs are given in Table 4.

Table 4. Learning Areas / Units in Teaching Programs

	2006 (Learning Areas)	2012 (Learning Areas)	2018 (Units)
Learning Areas/Units	• Basic Operations and Concepts • Usage of Information Technologies • Advanced Practices in Information Technologies • Scientific Process in Information Technologies • Ethics and Social Values of Information Technologies	• Informatics Literacy • Establishing Communication, Information Sharing and Self-Expression Using Information Technologies • Researching, Information Structuring and Collaborative Work • Problem Solving, Programming and Developing Original Product	• Information Technologies • Ethics and security • Communication, Research and Cooperation • Product Creation • Problem Solving and Programming

According to Table 4, it is seen that the concepts commonly used in learning areas / units are the use of information technologies. Examples of activities and learning areas and activities related to the units are not included in the curriculum implemented in 2018, while they are included in the curricula implemented in 2006 and 2012. In 2006 and 2012, detailed lesson plans and activity examples were given.

Measurement and Evaluation Approaches in Curriculums
The data about measurement and evaluation approaches in curricula are given in Table 5.

Table 5. Measurement and Evaluation Approaches in Curriculums

	2006	2012	2018
Measurement and Evaluation Approaches	• Performance evaluation Rubrics • Check lists • Interview • Self-assessment and peer review • Project • Digital product file (portfolio) • Concept maps • Short response materials • Multiple choice questions • Matching materials • Open-ended questions	• Grading scale • Rubrics • Checklist • Performance evaluation • Product file (portfolio) • Peer review • Self-assessment	• The curriculum does not draw definitive boundaries to the practitioners in terms of the measuring instruments and methods that can be used in the measurement process, but only guides them. • Measuring results are handled in unison with the processes being followed. • The academic development of a student can not be measured and evaluated by a single method or technique, evaluation is carried out with the active participation of the students.

The measurement evaluation tools recommended in 2006 and 2012 curricula are mentioned and examples of these tools are presented. In 2018, examples of measurement evaluation tools are not included, but only the principles to be considered in the measurement evaluation process are specified.

Conclusıon And Recommendatıons

As a result of the examination of the programs, it is seen that informatics courses became compulsory at primary level in 2018 while it was an elective course in 2006 and 2012. Computer Teaching Program was developed for 1-8 grades in 2006 and it was developed for middle school (grades 5-8) in 2012. In 2018, it was developed to be applied in 5th and 6th grades.

When nomenclature is examined, it is seen that the name of the course was changed from "Primary Computer Course" in 2006 to "Information Technologies and Software Course" in 2012 and 2018. While the objectives of the program were placed under the title of vision in 2006; In 2012 the program was included in the title of objectives and competences. In 2018, it was mentioned as a special purpose in the teaching program.

When it is examined in terms of learning areas, while learning areas are included in curriculums of 2006 and 2012; units were included directly in 2018. When the curricula are examined in terms of achievements, the achievements in 2006 and 2018 are stated separately by class level. It was expressed as a framework program in the 2012 curriculum and includes achievements without class level. Examples of activities were included in 2006 and 2012 curricula. However, it is determined that there are no examples in this issue in 2018. In 2006 and 2012 curricula, the recommended assessment tools were mentioned and examples of these tools were presented. In 2018, examples of measurement evaluation tools are not included, but only the principles to be considered in the measurement evaluation process are specified. A comprehensive review can be conducted with different curriculum evaluation methods by considering all past curriculums that are relevant to the studies. However, in-depth examination can be made in comparison with different program evaluation methods. By examining the curriculums of computer courses abroad, it can be compared with the curriculums of computer courses in our country.

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